

## 9. Conclusions

A core group of modifiable risk factors is common to major chronic diseases, including cardiovascular diseases, diabetes, cancer, and chronic obstructive pulmonary diseases.<sup>5</sup> Oral diseases share many of common risk factors, including dietary habits and tobacco use. Low-income and socially marginalized populations are disproportionately affected by these conditions.<sup>5</sup>

Common risk factors and chronic diseases are increasingly common in the United States.

- 9% of the US population (30.3 million people) has diabetes; nearly one-quarter of these cases are undiagnosed.<sup>19</sup>
- An additional 33% of the US adult population has prediabetes.
- 29% of adults have hypercholesterolemia.
- 34% of adults have hypertension; approximately half of these cases are uncontrolled.
- 38% of American adults and 20% of adolescents are considered obese.
- 16% of adults aged 25 and older report current cigarette smoking.<sup>94</sup>

Public health activities that target common risk factors through medical and dental integration aim to improve cost-effectiveness of these efforts and reduce health disparities. Medical-dental integration in public health settings can minimize duplication of efforts and enable consistent messaging. Integration that simultaneously targets medical and dental conditions can increase the efficient use of public health resources to improve oral health and physical well-being. Many of the programs described in this report target more than one risk factor or behavior. This was commonly found in organizations that offer co-location of medical and dental clinical services and in organizations that serve relatively large populations.

### *Models of Medical-Dental Integration*

The National Maternal and Child Oral Health Policy Center has proposed a framework for medical-dental integration to describe potential health home models.<sup>95</sup>

- 1) **Full medical-dental integration.** In this model, dental and medical providers are members of an interprofessional group practice at a single location.
- 2) **Co-location.** Medical and dental providers are located at the same facility but do not work in an integrated care team. Co-location enhances communication between providers and facilitates active referrals.
- 3) **Shared financing.** This payer model includes risk-based models of care such as ACOs, where medical and dental providers share financial risk.
- 4) **Virtual integration.** This model involves a shared EHR system, which facilitates bidirectional referrals and identification of high-risk patients.
- 5) **Facilitated referrals.** This is the least integrated model, where formalized referrals between medical and dental providers can facilitate follow-up.

The programs and activities that we identified in this environmental scan frequently demonstrate elements from several of these models. For example, some co-located medical and dental clinics have a shared EHR; however, several programs noted this as a limitation to integration. Although not completely applicable to the activities reviewed here, this framework does offer a helpful schema for considering types of integration.

### *State Activities*

State oral health and chronic disease programs can provide support for higher-level system changes by addressing medical-dental integration in strategic planning efforts, including state oral health plans. We found several examples of states that embrace the concept of oral health-medical integration, albeit with different approaches.

- **South Carolina** has a recommendation from its Oral Health Coalition that includes chronic disease within its dental public health priorities, with the understanding that common risk factors should not be overlooked.

- **Maryland** has action steps for increasing the ability and capacity of oral health professionals to screen for various chronic diseases and refer to the appropriate health care professional for more definitive evaluation and treatment.
- **Michigan** includes in its state oral health plan an objective that proposes to “increase the number of oral health care providers who have formal relationships (e.g., Memorandum of Understanding for patient referrals) with other health care providers by 10%.” The intent is to promote oral health providers as an integral part of the health care team with bidirectional referrals for health concerns.
- As part of a priority area related to prevention and systems of care, **Oregon** includes a strategy to reimburse dental professionals for chronic disease prevention activities, including diabetes screenings and tobacco cessation services.
- Similarly, **Colorado** calls for an increase in the number of reimbursable procedures that can be performed by primary care providers (with proper training) to prevent oral disease.
- **Colorado** also explicitly includes an activity to “collect and provide data that shows the connection between oral health and chronic disease” as a strategy within its financing objective. The intent is to ensure that Colorado adults have access to oral health preventive and treatment services that are covered by public insurance programs.

### *Outcomes*

Overall, published information about program evaluations and outcomes is limited. In most instances, programs that tracked outcomes did so in the form of numbers of patients screened or who received a certain service. For example, Trillium Coordinated Care Organization in Oregon reports metrics that include number of patients who receive smoking cessation counseling from dental providers. We identified only one publication that evaluated health outcomes associated with integrated activities in a public health clinical setting. In a randomized clinical trial, Lalla et al<sup>36</sup> identified dental patients with elevated A1C levels and evaluated the effectiveness of an intervention designed to improve health outcomes following positive screening findings in a dental setting. The intervention included patient education about the implications of screening results and a written report for patients to take to the recommended primary care follow-up.

Although that study did not find any difference in A1C levels and rates of primary care follow-up between the control and intervention groups, the authors note that even the control group received minimal advice from the dental professional about diabetes risk and the need for follow-up.<sup>36</sup>

### *Challenges*

Most of the challenges identified by this environmental scan are not unique to medical-dental integration but shared with other public health activities: lack of funding, stakeholder buy-in, competing priorities, scalability, and sustainability. Specific challenges in this field are largely related to:

- 6) **Evidence of effectiveness.** Many integrated activities lack documentation of effectiveness for cost and health outcomes.
- 7) **Professional guidelines.** Stakeholders note a lack of standardized guidance from professional organizations and agencies and a lack of established protocols for implementing integrated activities.
- 8) **Patient follow-up.** Risk factor and disease screenings can improve health outcomes when patients complete recommended follow-ups with medical or dental providers. Several programs identified in this report did not have a mechanism in place to assist patients with follow-ups. Without help from systems of care, it is unlikely that patients will be able to resolve existing barriers that have prevented them from receiving recommended services.
- 9) **Reimbursement for services.** Payment mechanisms to reimburse providers for cross-disciplinary services are lacking, although some state Medicaid agencies have made progress here.
- 10) **Sustainable funding.** Grants from the CDC and private foundations are often major funders of activities related to medical-dental integration. While these funding mechanisms support exploration of innovative programs and pilot projects, our key informants and survey respondents frequently identified lack of sustainable funding as a major challenge

to continue programmatic activities. However, one benefit of grant-funded initiatives is that funders can require evaluation components, which we found to be the source of most outcomes information that we were able to identify.

### *Recommendations*

- 1) **Patient referrals.** Many integrated programs include cross-disciplinary patient referrals. For example, dental providers who screen patients for diabetes often refer high-risk patients for primary care follow-ups. Active referral methods, including “warm hand-offs” and direct patient scheduling, can improve referral completion rates. Completions are also improved by establishing formalized protocols within an organization and training providers in these protocols. Active methods that use shared EHRs also allow for programs to evaluate outcomes.
- 2) **Professional guidelines.** Creating professional guidelines and toolkits for integrated activities would reduce start-up barriers to implementation, improve provider confidence, and facilitate standardization. As an example, several state oral health plans (California, Michigan, and Minnesota) already emphasize consistent screening protocols or consistent messaging to assist people in discontinuing tobacco use.
- 3) **Holistic targeting of risk factors.** Many programs target multiple common risk factors. For example, it was not uncommon to find that if a community health center performed point-of-care diabetes screenings in dental settings, it also performed blood pressure screenings. Future initiatives should consider targeting common risk factors using a holistic approach where this is appropriate.
- 4) **Prioritization of local community needs.** Although this type of holistic approach was often noted with large-scale organizations, several smaller programs targeted single risk factors based on local needs assessment. This approach may be more appropriate for organizations that serve smaller populations or have fewer resources.
- 5) **Integration of health care teams.** Innovations that capitalize on workforce flexibility of dental hygienists and CHWs help bridge the gap between medical and dental care. In addition to preventive services, these workers can also assist with case management, care coordination, and social services. By incorporating these workers into integrated care teams, public health programs can extend the reach of medical and dental services to address social determinants of health.
- 6) **Develop public health legislation to target chronic diseases and oral health.** Legislation that supports workforce flexibility, targets sugar-sweetened beverage consumption, and improves reimbursement for cross-disciplinary services promotes high-level systems change to support integration.

### *Additional Resources*

Several previous publications offer in-depth case studies describing well-established programs that integrate primary care medical and dental services in clinical settings. For additional details about these case studies, we recommended the following resources.

- “Oral Health Integration in the Patient-Centered Medical Home (PCMH) Environment: Case Studies from Community Health Centers”<sup>15</sup>
  - 1) Neighborcare Health (Seattle, WA)
  - 2) Dorchester House Multi Service Center (Boston, MA)
  - 3) The Marshfield Clinic (Marshfield, WI)
  - 4) Terry Reilly Health Services (Boise, ID)
- “Case Studies of 8 Federally Qualified Health Centers: Strategies to Integrate Oral Health with Primary Care”<sup>46</sup>
  - 1) Blackstone Valley Community Health Care (Pawtucket, RI)
  - 2) Ravenswood Family Health Center (East Palo Alto, CA)
  - 3) United Community & Family Services (Norwich, CT)
  - 4) Wayne Memorial Community Health Centers (Honesdale, PA)

- “White Paper: Integrating Oral Health with Primary Health Care”<sup>77</sup>
  - 1) Yakima Valley Farm Workers Clinic (multiple sites, WA and OR)
  - 2) Hennepin Health (MN)
- “Integration of Oral Health with Primary Care in Health Centers: Profiles of Five Innovative Models”<sup>58</sup>
  - 1) Bluegrass Community Health Center (Lexington, KY)
  - 2) Holyoke Health Center (Holyoke, MA)
  - 3) Salina Family Healthcare Center (Salina, KS)
  - 4) Salud Family Health Center (Fort Lupton, CO)
  - 5) Yakima Valley Farm Workers Clinic (multiple sites, WA and OR)

“Kick the Can” is an initiative to document current public health activities related to the negative health effects of sugar-sweetened beverages. Kick the Can’s website ([www.kickthecan.info](http://www.kickthecan.info)) offers advocacy tools, links to recent research studies, and examples of targeted policies. Public health officials and stakeholders interested in educational campaigns and policy initiatives targeting sugar-sweetened beverage consumption and healthy beverage choices are referred to this resource.

